

M other L ess C assette



Mother Less Cassette

DATA EAST'S SKULLFANG



INSTRUCTIONS



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| | | |
|---|-------------|------------------------------|
| 1 | 510-0255-00 | PCB, SKULL FANG |
| 1 | 830-0080-00 | MARQUEE, SKULL FANG |
| 1 | 406-0514-00 | INSTRUCTION CARD, SKULL FANG |
| 1 | 780-5037-00 | MANUAL, SKULL FANG |
| 1 | 001-0001-00 | WHITE VIDEO KIT CARTON (BOX) |

BEFORE OPERATING THIS CASSETTE

This Cassette is software for commercial use VIDEO GAME only.

CAUTION

1. Do not operate this product with anything other than JAMMA standard and / or the accompanying connectors. Use of other connectors may result in fire or damage to Cassette.
2. Do not under any circumstances dismantle or modify Cassette. Dismantling or modifying Cassette may result in fire, electric shock, or damage to the unit.
3. Do not obstruct the air vents. When in use, do not wrap Cassette in cloth or other materials. Do not install Cassette in such a way that the air vents become obstructed. Cassette will give off heat during normal operation. Obstruction of the air vents may result in fire.
4. Do not install in places that are dusty, humid, or are in direct sunlight. Installing Cassette in such places may result in damage to the unit.
5. Do not get cassette wet, or touch it with wet hands. Doing so may result in electric shock.
6. Always turn the machine off before connecting Cassette. Connecting Cassette while the power is on may result in damage to the unit.
7. Do not under any circumstances remove the protective seals from Cassette. Cassette units with removed or damaged seals may not be accepted for repair by Data East.

SPECIFICATIONS

POWER CAPACITY

+ 5 V (± 5%) 2.5 A
+ 1.2 V (± 5%) 1.5 A

OPERATING ENVIRONMENTS

OPERATION 5~35°C/20~80% (No condensation)
STORAGE -15~65°C/10~90%

MONITOR

COLOR SIGNALS : R.G.B.
BALK : 0~+0.04 V
PICTURE SIGNAL : +0.04 V~+4.5 V
SYNCH SIGNAL : 0 (0~+0.05 V)
: 1 (+3 V~+5 V)

TERMINAL

JAMMA STANDARD CONNECTOR (x1)
EXT CONNECTOR (x1)

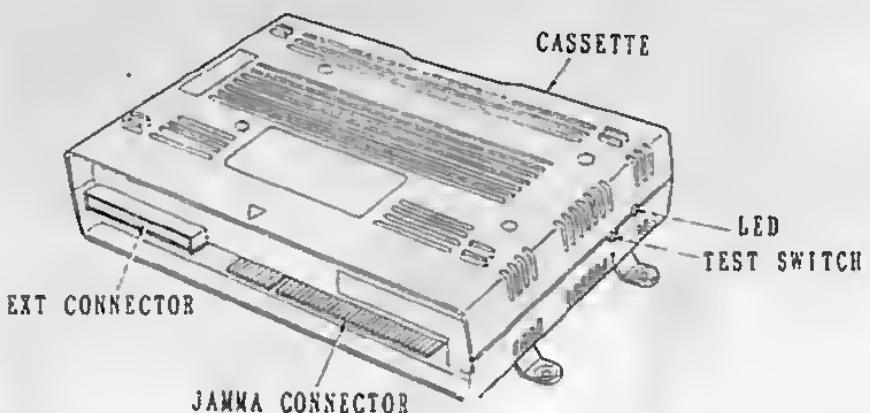
DIMENSIONS

(W) 241 mm × (D) 168 mm × (H) 58.5 mm

WEIGHT

800 g

MLC PARTS IDENTIFICATION



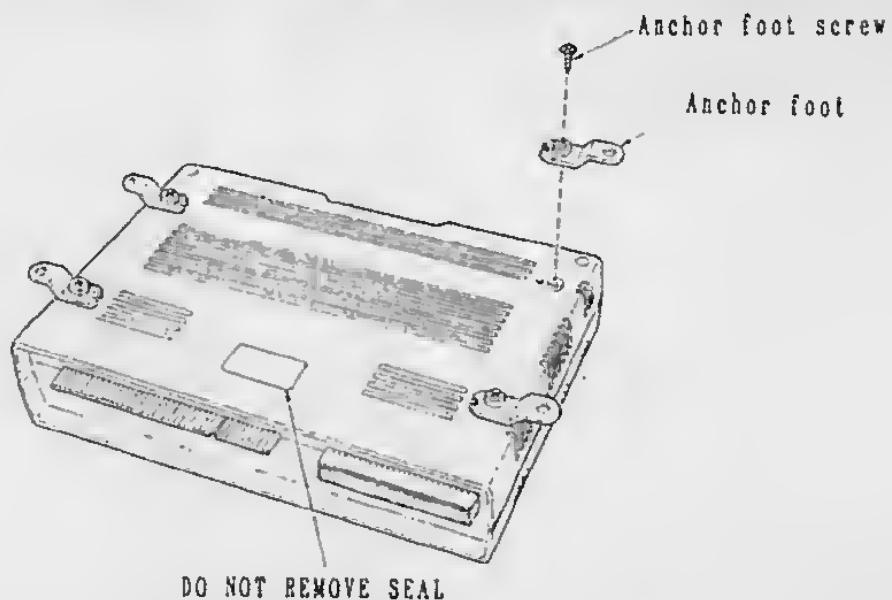
This product generates heat when in operation and may remain hot after electricity is turned off. Do not touch the cassette while in operation or soon after the unit is switched off.

When installing the unit into the game cabinet be sure the JAMMA connector is plugged in correctly, with the parts side facing upwards. Plugging the unit in incorrectly may damage components.

If plugged in incorrectly, turn the unit off immediately.

Re-insert the JAMMA connector correctly and switch the unit on again.

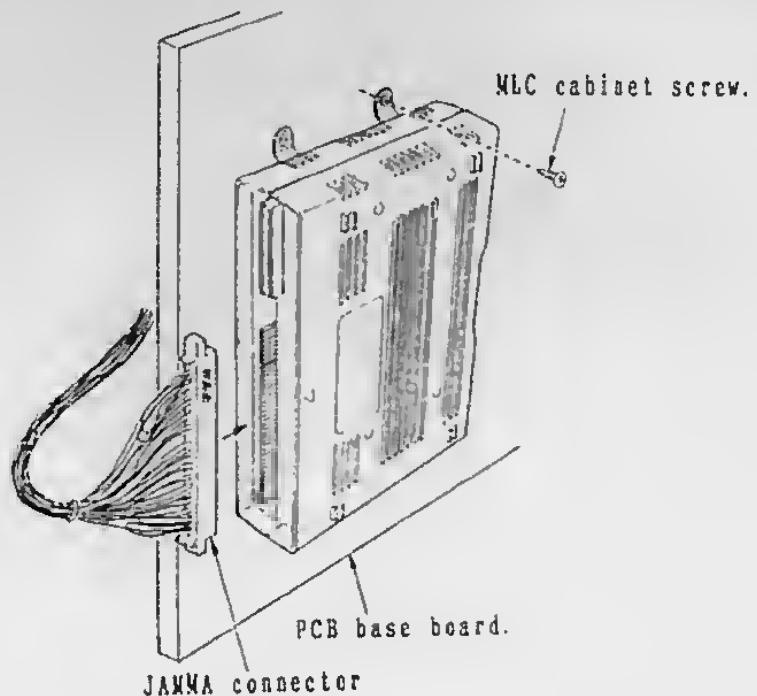
ATTACHING THE MLC ANCHOR FEET



The anchor feet included in the MLC kit are attached to the main unit by using the four anchor feet screws (also included).

When attaching the anchor feet, avoid turning the screws too tightly. Turning the screws too tightly may damage the MLC unit.

ATTACHING THE MLC UNIT TO THE CABINET

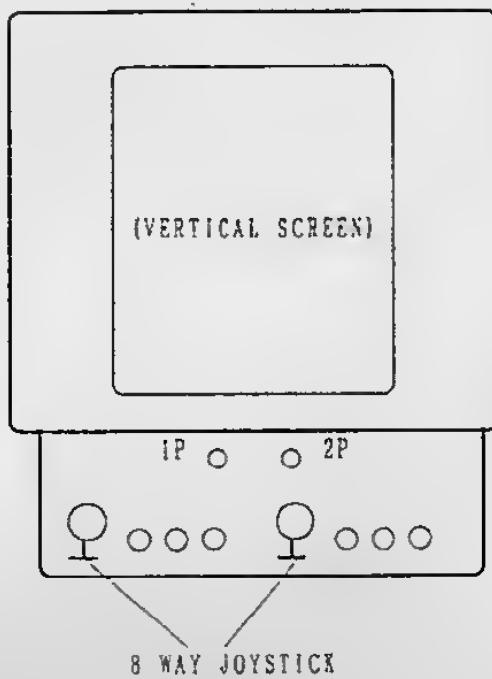


We recommend attaching the MLC unit to the game cabinet in the manner illustrated above.

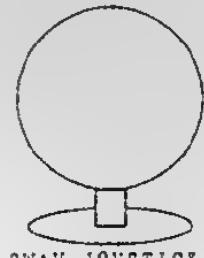
Always turn off the power before plugging in the connectors. Avoid plugging in the JAMMA connector upside-down.

1. INSTALLATION

1-1 CRT MONITOR



1-2 CONTROL PANEL



8WAY JOYSTICK



BUTTON 1



BUTTON 2



BUTTON 3

BUTTON 1 (PUSH 1) Shot button

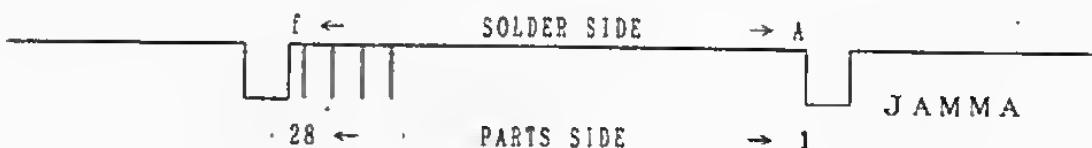
BUTTON 2 (PUSH 2) Throttle (speed shift) button

BUTTON 3 (PUSH 3) Barrel Roll and Bomb button

2. HARNESS CONNECTION

2-1 TERMINAL NUMBERING

CONNECTOR CR7E-56DA-3.96E (HRS13.96mm pitch)
1168-056-009 (XEL) 3.96mm pitch



2-2 SIGNAL TO TERMINAL

| SOLDER SIDE | PIN # | PARTS SIDE |
|----------------|-------|----------------|
| GND | A 1 | GND |
| GND | B 2 | GND |
| +5V | C 3 | +5V |
| +5V | D 4 | +5V |
| | E 5 | |
| +12V | F 6 | +12V |
| | H 7 | |
| | J 8 | COIN COUNTER 1 |
| (GND) | K 9 | (GND) |
| SPEAKER (-) | L 10 | SPEAKER (+) |
| | M 11 | |
| VIDEO GREEN | N 12 | VIDEO RED |
| VIDEO SYNC | P 13 | VIDEO BLUE |
| SERVICE SWITCH | R 14 | VIDEO GND |
| | S 15 | TEST SW |
| COIN SWITCH 2 | T 16 | COIN SWITCH 1 |
| START SWITCH 2 | U 17 | START SWITCH 1 |
| 2P UP | V 18 | IP UP |
| 2P DOWN | W 19 | IP DOWN |
| 2P LEFT | X 20 | IP LEFT |
| 2P RIGHT | Y 21 | IP RIGHT |
| 2P PUSH 1 | Z 22 | IP PUSH 1 |
| 2P PUSH 2 | a 23 | IP PUSH 2 |
| 2P PUSH 3 | b 24 | IP PUSH 3 |
| 2P PUSH 4 | c 25 | IP PUSH 4 |
| | d 26 | |
| GND | e 27 | GND |
| GND | f 28 | GND |

※ JAMMA

Be careful to avoid plugging the JAMMA connector in upside-down.
Installing cassette in upside-down may result in damage to the unit.

3. TEST MODE

This PCB is equipped with a self-test feature. Self-test will automatically be carried out after turning the game unit on.

An error screen will appear should any malfunction be discovered during the self-test.

WARNING
GAME MODE SETTING ERROR

Should the error screen be displayed, please contact either your distributor or Data East Corporation.

PUSH TEST SWITCH TO RESET OPTIONS

4. TEST SWITCH

A small black test switch is located on the side of this PCB. Pressing this switch will bring up the game setting menu. The options available from the game setting menu are; I/O CHECK, GAME OPTIONS, COIN OPTIONS, SOUND OPTIONS. Coin settings, Sound volume setting, etc... can be carried out from these screens.

MENU

| | |
|---------|---------|
| GAME | OPTIONS |
| COIN | OPTIONS |
| SOUND | OPTIONS |
| I/O | CHECK |
| COLOR | CHECK |
| SCREEN | CHECK |
| INITIAL | |

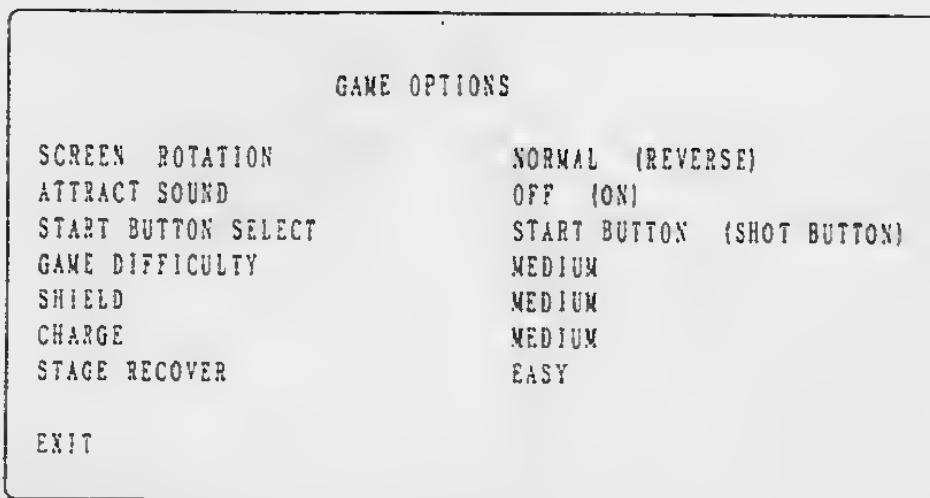
GAME MODE

Game Options and Coin Options can be reset to the default (factory) settings by selecting "YES" at the INITIAL option prompt.

Highlight "GAME MODE" and press the 1P BUTTON 1.

5. GAME OPTIONS

Highlight the GAME OPTIONS selection. Press the [P button 1 (Punch) to enter this screen. Game difficulty levels etc.... can be adjusted from this screen.



○ SCREEN ROTATION

○ ATTRACT SOUND

Switching to "OFF" will cancel sound during demo mode.

○ START BUTTON SELECT

Determines which button will initiate game start.

○ GAME DIFFICULTY

There are eight different difficulty levels to choose from.

For normal difficulty select "MEDIUM".

EASIEST ⇔ VERY EASY ⇔ EASY ⇔ MEDIUM ⇔ MEDIUM HARD ⇔ HARD ⇔ VERY HARD ⇔ HARDEST

○ SHIELD

Select player shield power at this option. Shield power (recovery rate) can be set at 4 different levels. Default setting is MEDIUM.

EASY ⇔ MEDIUM ⇔ HARD ⇔ VERY HARD
VERY STRONG STRONG WEAK VERY WEAK

○ CHARGE

Select rate of power meter recharge at this option. Power meter recharge can be set at 4 different levels. Default setting is MEDIUM.

EASY ⇔ MEDIUM ⇔ HARD ⇔ VERY HARD
VERY FAST FAST SLOW NO

○ STAGE RECOVER

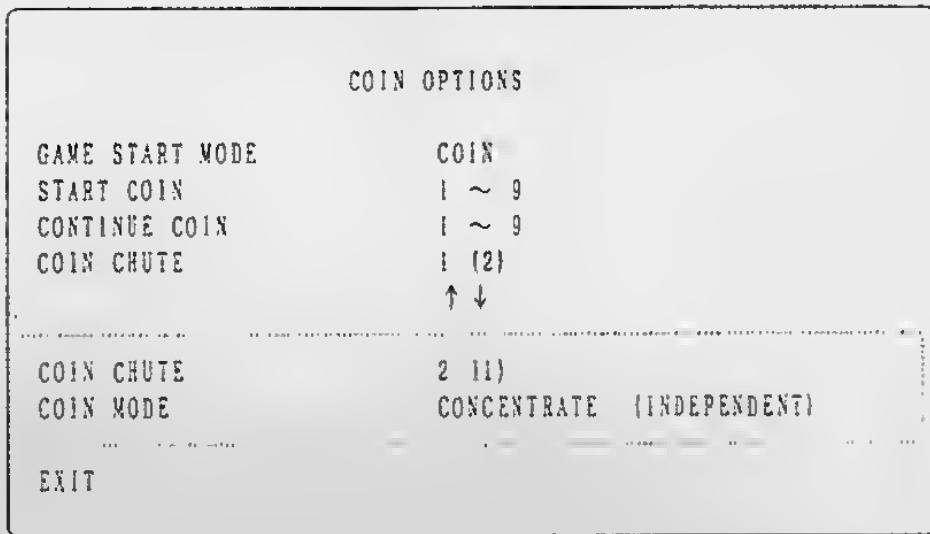
Select rate of stage clear shield recovery at this option. Upon successfully clearing each stage, player's shield energy will automatically recover at the determined ratio. Default setting is EASY.

EASY ⇔ MEDIUM ⇔ HARD ⇔ VERY HARD
100% 50% 25% 0%

6. COIN OPTIONS

Highlight the "COIN OPTIONS" selection and press the 1P button to bring up the coin options menu. The number of credits required for each game can be set from this menu. From the COIN OPTIONS selection, coin, or free play options can be selected. Coin Credit counter stops counting after 99 credits. Any credits after the 99th credit will not be registered.

6-1 GAME START MODE : COIN



- GAME START MODE
Coin option settings.
- START COIN
Number of coins required to start game.
- CONTINUE COIN
Number of coins required to continue game.
- COIN CHUTE
Coin mechanism settings.
- COIN MODE
 - 1. CONCENTRATE = Selecting 'CONCENTRATE' will pool all inserted coins regardless of coin slot used.
 - 2. INDEPENDENT = Selecting 'INDEPENDENT' will activate only the play station connected with the coin slot used.

6 - 2 GAME START MODE : CREDIT

| COIN OPTIONS | |
|-----------------|---------------------------|
| GAME START MODE | CREDIT |
| START CREDIT | 1 ~ 9 |
| CONTINUE CREDIT | 1 ~ 9 |
| COIN CHUTE | 1 (2) |
| COIN MODE | CONCENTRATE (INDEPENDENT) |
| CHUTE #1 | 1 COIN |
| | 1 CREDIT |
| CHUTE #2 | 1 COIN |
| | 1 CREDIT |
| EXIT | |

- GAME START MODE
Coin option settings.
- START CREDIT
Number of coins required for 'start' credit.
- CONTINUE CREDIT
Number of coins required to continue game.
- COIN CHUTE
Coin mechanism settings.
- COIN MODE
 - 1. CONCENTRATE = Selecting 'CONCENTRATE' will pool all inserted coins regardless of coin slot used.
 - 2. INDEPENDENT = Selecting 'INDEPENDENT' will activate only the play station connected with the coin slot used.
CHUTE 1(COIN MECH #1) = 1 - 9 coins
1 - 9 credits
CHUTE 2(COIN MECH #2) = 1 - 9 coins
1 - 9 credits

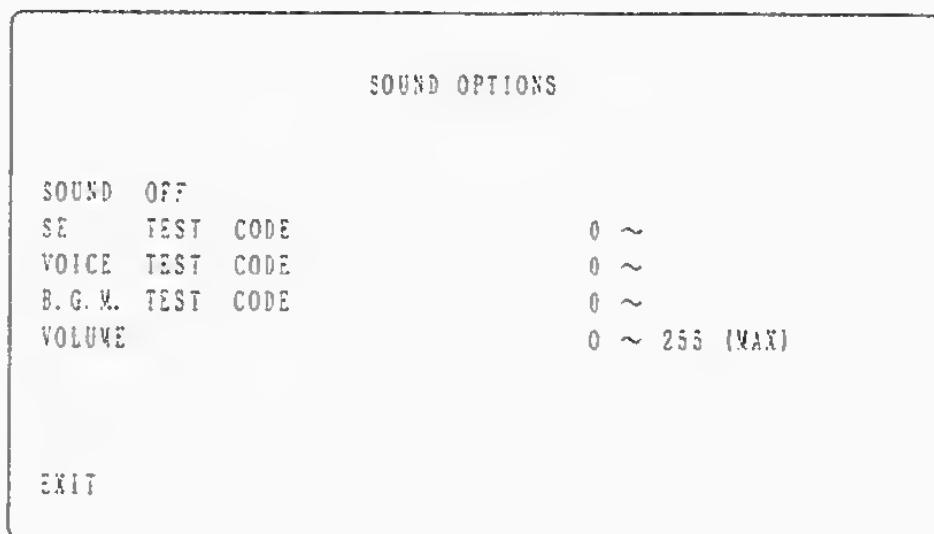
6 - 3 GAME START MODE : FREE PLAY

- ©Selecting FREE PLAY will allow the game to be played for free (for exhibitions, shows, etc...).

| COIN OPTIONS | |
|-----------------|-----------|
| GAME START MODE | FREE PLAY |

7. SOUND OPTIONS

Sound output and sound volume can be adjusted at the SOUND OPTIONS screen.



- SOUND OFF
If you select this the sound will be turned off
- SE TEST CODE
Used for testing sound effects code.
- VOICE TEST CODE
Used for testing voice code.
- BGM TEST CODE
Used for testing background music code.
- VOLUME
Used for adjusting sound volume.

TROUBLESHOOTING

Check the following before sending your unit in for repair.

1. No picture.

- Is the JAMMA connector plugged in correctly? Make sure the connector is not plugged in upside-down. Always use JAMMA standard connectors.
- Is the machine running at the proper voltage? Check to make sure the voltage is at the appropriate level. Adjust the voltage if necessary.
- Check to make sure there is no break in the RGB line. Check the monitor and JAMMA connector wiring.

2. No sound.

- Is the volume set at an appropriate level? Raise the volume from the test mode. Adjust the cabinet volume control if necessary.

3. Sometimes malfunctions.

- Check the voltage. Adjust if necessary.

4. Cassette case becomes hot.

- Are the air vents obstructed? Make sure the air vents are unobstructed during operation. Do not operate near heating equipment or in direct sunlight.

WHAT TO DO IF THE LED LAMP STARTS BLINKING

If, under normal operating conditions, the LED lamp on the side of cassette case starts blinking, please contact your Data East dealer immediately.

If you notice any problems in game play or screen display, stop operation and contact your Data East distributor immediately.

Operating a defective cassette unit may result in damage to the cabinet.

WARRANTY INFORMATION:

Data East USA, Inc. (Seller), warrants only to the initial purchaser of its products that the items listed below are free from defects in material and workmanship under normal use and service for the warranty periods specified:

1. Printed Circuit Boards (PCB) 90 days.

No other parts of the Seller's products are warranted.

Warranty periods are effective from the initial date of shipment from the Seller to its authorized distributors.

Seller's sole liability shall be at its options, to repair or replace products which are returned to Seller during the Warranty periods specified, provided:

1. Seller is notified promptly upon discovery by buyer that stated products are defective.
2. Such products are properly packaged and then returned, prepaid to Seller's plant.

This warranty does not apply to any parts damaged during shipping or handling, or due to improper installation or usage, or alteration. In no event shall the Seller be liable for any anticipated profits, loss of profits, loss of use, incidental or consequential damages or any other losses incurred by the customer in connection with the purchase of a Data East USA, Inc. products.

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